# National Cancer Program





Report of the

President's Cancer Panel

January 1973

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Submitted to

The President of the United States

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

National Institutes of Health

National Cancer Institute

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The President
The White House
Washington, D.C.

Dear Mr. President:

The President's Cancer Panel is pleased to set forth in this letter its year-end evaluation of the efficacy of the National Cancer Program as required by Sec. 407 (c)(4) of the National Cancer Act of 1971. The Director of the National Cancer Institute has reported to you in detail on the progress of the National Cancer Program during 1972. The National Cancer Advisory Board has also reported on its activities and its views with respect to certain aspects of the Program. This letter will not undertake to duplicate or summarize the material contained in those reports. Instead we will attempt to give you the Panel's evaluation of the Program, and to deal briefly with some of the more important issues which the Panel feels should be brought to your attention.

## Overall Evaluation

At the time of our appointment you directed the Panel to work with the Director of the National Cancer Institute and his staff and with the National Cancer Advisory Board to the end of giving the American people the best program in cancer research of which American medicine and American science is capable. We believe that good progress has been made toward that goal.

## The National Cancer Act of 1971

This legislation provides a sound foundation on which to build an effective National Cancer Program. No major legislative changes are necessary. The

independence which has been provided the Director of the National Cancer Institute by the Act and by the Executive arrangements which you have established is sufficient for the effective conduct of the program, and the working arrangements of the National Cancer Institute within NIH and HEW are, on the whole, satisfactory. There remain some problems of adjustment in the relationships between the National Cancer Institute, the National Institutes of Health and HEW, primarily relating to administrative matters, but these can be correced within the framework of the present organizational arrangements and do not require legislation.

By providing budgetary and other independence for NCI, the Act facilitates the top priority which has been assigned to the Cancer Program. At the same time, since NCI remains within the NIH, there is less concern in the scientific community that biomedical research will be fragmented, that an attempt will be made to program types of biomedical research that are not susceptable to programming, or that effective peer review will be jeopardized. In short, the Panel has been well pleased by the way in which the NCI has been able to function within the framework of the new legislation and the administrative procedures which you have put into effect.

## Expenditures

Even before the National Cancer Act was passed, the impact of the new cancer initiative which you announced in January of 1971 was already being seen in the funding of the National Cancer Program. In the fiscal year ending June 30, 1970, $181 million was apportioned for cancer. In 1971, the figure rose to $232 million. In 1972, we had $378 million, and for the current year we have been authorized to proceed on the basis of $432 million.

Of the $378 million spent in fiscal 1972, approximately $59 million was spent intramurally, or in-house (i.e., within the NCI or NIH) on research and administration. Twelve million dollars was spent through other government agencies, and the balance of $307 million was spent outside the government. Of the $59 million spent in-house, about $37 million was spent on scientific research and the balance of $22 million on administration and administrative management, including the operation of the Clinical Center. Of the $320 million that was spent externally, approximately one-half the money was spent in areas normally described as basic research and approximately one-half was spent on clinical and clinically-related research. $194

million was spent via the grant mechanism and $126 million was spent by contract.

If we eliminate construction and training expenditures from the grant's figure, grant-supported research was approximately the same as contract-supported research. I believe that these figures show that less money is being spent internally than most people think; that basic biological research is not being shortchanged; that grant-supported research meeting high standards of scientific excellence and relevance to the cancer program continues to be supported in substantial amounts; and that there is a good balance between basic research designed to find the answers and the effort to take the fruits of our findings to the patient.

The Panel has worked very closely with the Director on the allocation of the 1973 budget, and I believe that the $432 million which you have released for 1973 has been allocated in the most effective way. However, it now appears that this figure will leave us somewhat short of the minimum amounts needed for certain very critical programs such as the Centers Program, the Control Program, and the Scientific Program in Immunology, and that it will not permit a construction allocation adequate to meet the minimal requirements for the implementation of essential programs. The Panel will recommend a specific supplemental allocation limited to those amounts we consider absolutely essential to maintain the momentum of the Program. The Panel is keenly aware of the necessity and the difficulty of operating the government within a sound overall budget ceiling, and we will be sensitive to the importance of keeping expenditures to the absolute minimum consistent with our mission.

## Science

Obviously simply spending more money will not solve the cancer problem. As you have pointed out on several occasions, there is much more behind the new cancer initiative than that. There is no question that we have more opportunities in cancer research and more promising areas for accelerated exploration than have ever heretofore existed. In cell biology, molecular biology, immunology, virology, cancer causation, and in diagnosis, surgery, radiotherapy, chemotherapy and combination treatments there has been a broad and powerful wave of advances in cancer science, and new discoveries which enhance our knowledge are pouring forth at an unprecedented rate. In some areas we already have enough knowledge for prevention or cure. However, there are still enormous areas of ignorance about cancer, and in those areas

physicians are compelled to work with incomplete technologies which are expensive and of limited effectiveness when compared with the kind of technologies that can be used in those areas of medicine where the disease mechanism is understood and outright prevention or cure is possible.

This raises a difficult question of priorities. What is the proper balance between research designed to expand our present scientific knowledge as rapidly and intelligently as possible and the effort to see that our present knowledge is applied in the most effective way possible to prevent or control cancer among our people today? Many physicians engaged in cancer practice, and a number of the members of the National Cancer Advisory Board, are concerned lest we spend too much on basic research and too little in getting the best possible treatment to the patients today. They point out that we are curing only about one-third of those with cancer and that with the best application of our present knowledge we should be curing fifty to sixty percent. Most of the biomedical scientists, and other members of the National Cancer Advisory Board, are concerned that we spend too little on basic research and too much on the effort to get the best care to the patients at a time when, in many instances, even the best care is highly unsatisfactory. This is admittedly a very difficult balance, but it is a very essential one, and any good cancer program must make maximum progress on both these fronts. The fact that our Board is divided and the fact that our scientists and physicians are divided as to where the major emphasis should be will be an important strength in seeing that we keep appropriate emphasis on both sides of the problem and make maximum progress in both directions.

Perhaps the most important preoccupation for those charged with assigning scientific priorities under the Cancer Program is to see that the money is spent for work that meets the highest standards of excellence, whether it is spent to expand our scientific knowledge or to develop technologies for applying what we know more effectively.

The Director of the National Cancer Institute and his staff are completely committed to achieve the highest standards of excellence in the spending of the research monies, whether spent intramurally or outside, and whether spent by grant or contract. The argument as to the relative scientific quality of activities supported by grants and those supported by contracts is a continuing one. When contracts are used to support certain areas which are susceptible to targeted activity, such as large-scale testing or confirmation of therapeutic concepts or the accumulation of large-scale epidemiologic information or the rapid or proficient procurement of certain products needed for research (such as virus stocks, cell lines, etc.), there is little objection to the contract mechanism, although even there the contract should have the very strictest review

with respect to the qualifications of the recipient. However, when the contract is used to support research activities designed simply to expand scientific knowledge, there is a large segment of the scientific community that believes that the peer review system which has been traditionally used to set the standards of scientific quality is not applied with the same rigor and visibility in the contract program as it is in the grant program. The Director of the NCI has undertaken to meet this feeling in two principal ways. First, he has continued to use the grant procedures of NIH with peer review by study sections for a very large segment of the research program and this should continue to be the case because these procedures produce excellent results in the search for new knowledge. Second, he has strengthened the peer review and has introduced more outside scientists into the peer review for contract operations. In this connection, a very distinguished committee of independent scientists has been named to review all aspects of the Special Virus Cancer Program, one of the large contract programs. Thus, I believe we may look for continued improvement in the mechanisms for achieving higher and higher standards of excellence in the cancer research program.

We referred above to the vast number of discoveries which are being made continuously in all portions of the Cancer Program. Each of these discoveries enhances our knowledge, but no one of them represents, or is likely to represent, the kind of total breakthrough that will solve the cancer problem. Unfortunately, the media, and sometimes even the scientists, do not make this fact as clear as it should be made. Cancer is many diseases, undoubtedly stemming from a variety of causes, and it is unlikely that it will lend itself to a single form of immunization or a single cure. Therefore, we should not look upon the cancer research program as a crash program seeking a single solution. The answers will not come quickly or easily. However, the Panel is convinced that we can make far more rapid progress under the new Program than we have made heretofore and that many of the diseases which we know as cancer will be eliminated or controlled as a result of this Program. The cancer problem is becoming an ever more approachable scientific puzzle, and each additional bit of scientific information brings us closer to the day when we can satisfactorily manage a disease which today represents the number one health concern of our people.

# National Cancer Plan

Between October, 1971, and March, 1972, 250 prominent scientists and physicians, representing a broad spectrum of biomedical and clinical disciplines, met in a series of 41 planning sessions and two major review sessions for the purpose of developing a scientific and operational foundation for a National Cancer Plan. The first two volumes of the Plan are now in printed form and have been reviewed by members of the National Cancer Advisory Board and a distinguished committee of the Institute of Medicine, National Academy of Sciences. The third volume of the Plan dealing with administrative implementation and management is still in the process of preparation by the NCI staff.

The Plan is comprehensive and thorough and organizes, conceptually, a stupendous mass of biomedical scientific material. The Plan represents a total inventory of scientific areas to be covered and is intended to assure that no area of importance is either neglected or underemphasized. In short, it provides assurance that nothing falls between the cracks, and that leads which hold high promise will be exploited more promptly and thoroughly than they would if no plan were in existence. However, as the review committee pointed out, it must be recognized that certain types of investigations can be excellently managed by highly centralized planning, utilizing the style of systems analysis, but that there are other important areas of science, necessary for the solving of cancer, to which these methods are far less adaptable. The Director and his staff recognize this limitation on their ability to plan at this stage, and there will continue to be a heavy reliance in this area of science on individual scientists and independent groups of scientists well organized in collaborative, cross-disciplinary research who can provide a rich source of imagination and new ideas.

The Panel regards the planning process as having been an extremely worthwhile activity by the biomedical scientific community, and the Plan itself is viewed by us as an extremely helpful tool. We see no reason to expect that the existence of the Plan will impinge upon the proper managment of those areas which are not appropriate at this stage for reliance on a centrally managed scientific plan.

The review of the Plan by the Committee of the Institute of Medicine, National Academy of Sciences, was most constructive and helpful to the Board and the NCI staff in connection with the final preparation and use of the Plan. The report of that Committee under the chairmanship of Dr. Lewis Thomas is one of the most thoughtful and constructive policy documents on the proper approach to cancer research to emerge during the past year.

# Centers

One of the most important aspects of the National Cancer Program is the support of existing comprehensive cancer centers and the provision for the creation of new comprehensive centers. Of course, when Federal financing is thought to be available, applications for new centers greatly outstrip the funds available for this purpose. Therefore, it is essential to lay down strict criteria to determine where and how the centers' money will be spent. Without getting too deeply into the detail of the criteria developed by the Director and the Board, several attributes are of fundamental importance:

1. There must be a high quality interdisciplinary capability in the performance of diagnosis and treatment of malignant diseases built around an adequate cancer clinical center, so that there can be close association between research and clinical activities and a multidisciplinary approach to the problems of cancer management;

2. There must be an environment of scientific excellence so that the basic research will be of the highest quality;

3. There must be a nucleus of outstanding personnel capable of assuring the highest order of excellence in both the research and patient-oriented activities of the center; and

4. There must be strong institutional and community support, both financial and organizational, to assure the continuity of the center without excessive dependence upon NCI financial support.

Centers are also encouraged to develop the best possible community outreach in education, detection, and diagnosis; to develop a statistical base for the evaluation of results and to attempt to standardize disease classifications in order to provide meaningful interchange between institutions; to provide leadership in the community in organizing the medical profession within the area to engage in cooperative programs where such programs would be of advantage to the cancer patients of the area; and to cooperate in the various programs of the National Cancer Institute for the purpose of implementing and facilitating the National Cancer Program.

A special working group has been created to coordinate the activities of the various cancer centers and institutes so that all may have the benefit of the best developments occurring at the individual institutions and so that the start-up problems of the new centers will be minimized.

The Director has stated in his report that, in addition to the comprehensive cancer centers now in existence, seven new comprehensive cancer centers will be designated and will be receiving support before the end of fiscal 1973, and at least eight more are expected to be in operation by July 1974.

The Panel believes that the Centers Program is well conceived and is being well managed. However, there is a problem of allocating sufficient funds for the proper implementation of this program without making unacceptable cuts in other important aspects of the program.

## Cancer Control

One of the important mandates of the new Act is a separate Cancer Control Program. Obviously, the National Cancer Institute cannot and should not take responsibility for the care of the nation's cancer patients. This is a part of the general health care delivery system and should so remain. However, the purpose of the Control Program is to augment substantially the efforts already being made by the National Cancer Institute to do whatever is possible to see that the best possible technique of treatment reaches every patient. A particularly gratifying example of what the Control Program is intended to do is the program in acute lymphocytic leukemia in children. As a result of developments in chemotherapy during the past few years, we know enough today to give young patients with acute lymphocytic leukemia a good chance of survival and normal life expectancy if they receive the right treatment at the right time. We also know that these chances are materially lessened if a patient starts out with the wrong treatment before getting into the hands of those capable of the best diagnosis and care. A special program is being developed to see that all children with acute lymphocytic leukemia have access to the best treatment and care. Similar progress has been made in the treatment of Hodgkin's disease and other rapidly growing cancers of children and young adults, and these too will be embraced in the Control Program.

Other programs are being developed to improve prevention, early diagnosis, treatment and rehabilitation in cancer cases. One of these, the breast cancer detection program, deserves special mention because it is being undertaken as a joint project with the American Cancer Society. The National Cancer Institute and the National Cancer Program are most fortunate to have the strong cooperation of the American Cancer Society with its well organized membership of over 2 million to assist in public education and other programs. I am not aware of any government program which has access to an organization of comparable strength and dedication. The working relationships between the National Cancer Institute, the National Cancer Advisory Board, and the American Cancer Society are excellent in every sense and the American Cancer Society represents an invaluable asset in the fight against cancer.

## Fort Detrick

The Panel has visited the Frederick Cancer Research Center, formerly known as Fort Detrick, and this former biological warfare facility is being very effectively converted to a cancer research facility. The physical facilities at Frederick are perhaps the best in existence anywhere for certain very difficult and hazardous problems, such as the growing and handling of candidate human viruses. The facilities are also excellent for the growth and maintenance of animals and biological materials. To assure that the scientific mission of this great facility is conducted with unquestioned quality and excellence, the Director of NCI has appointed a top panel of the best experts in the scientific areas where Detrick will be active to advise the Director and the Board, and to assist in the scientific oversight of the program at Fort Detrick. Your conversion of the facilities at Fort Detrick from research on biological weapons to cancer research is a great symbol in moving toward the greater use of our resources for peaceful purposes. In addition, this facility will provide an important component of the overall Cancer Program.

## International Aspects of the Cancer Program

You have emphasized on several occasions your desire that the Cancer Program be a truly international program. Great progress has been made in this regard. We continue to work with scientists in Britain, Canada, Western Europe, Latin America, Australia, New Zealand, Japan, and parts of Africa and Asia, and there is a continuous interchange of information between the scientific communities in this country and in those nations. Further, we have made real progress in our interchanges with the Soviet Union since the Moscow agreements. In addition to exchanges of scientists, we have exchanged viruses and cancer drugs, and there has been a very substantial exchange of information on chemotherapy. We have a resident representative of the NCI in Moscow who is one of the ablest chemotherapists and cancer scientists in this country. From his intial reports, it is apparent that he is receiving utmost cooperation and that this interchange will prove most profitable to both countries. I am sure that we will develop similar interchanges with China and those countries of Eastern Europe, Africa and Asia with whom we are not currently engaged in collaborative activities. We have made clear your desire that any knowledge which we possess that will be useful to others be made available to them as promptly as possible wherever they may be.

# Training

In a letter dated June 13, 1972, replying to a letter from the Director of the Office of Science and Technology, the Chairman of the President's Cancer Panel said:

> "It is my view that fellowships and training grants, assuming proper selection and wise administration, are essential if we are to carry out the mandate of the President and the Congress in connection with the National Cancer Act of 1971. There are certain areas where sufficient numbers of highly skilled biomedical scientists do not exist today, and training in these areas is essential to the effective discharge of our mission. In addition, we must have ways of attracting at least a portion of our brightest young scientists into this program, and fellowships and training grants seem to me to be an essential mechanism. Another thing we should realize, it seems to me, is that very often fellowships and training grants are the least expensive and most effective way of getting the work done today. It is not entirely an investment in the future. Our most productive scientists would be greatly handicapped without the aid of high caliber graduate students and fellows.
>
> "In short, it seems to me that training grants and fellowships lessen the cost of getting the work done today, improve the caliber of the work, provide insurance for the future in the field of biomedical science, and minimize the extent to which effectiveness in the Cancer Program is attained at the expense of other biomedical research programs."

The Panel is of the view that the continuation and improvement of the training programs of the NCI is most important to the effective discharge of the mission you have assigned to us.

We realize that there is a strong feeling in OMB that these programs assist primarily in the education of highly trained specialists and enable them to move on to highly lucrative positions. There is also a feeling that we are training more people than our biomedical science will be able to absorb, and that the training programs are far less specific than the objectives of the Cancer Program themselves. While we agree that this is not the level at which to be handing out free educational programs and that we cannot afford programs unrelated to our specific objectives, we believe that the training dollars are among the best dollars spent in terms of value received and work accomplished. A trainee's stipend is less than $10,000 per year, and no M.D. or Ph.D. can be hired at that price. The training programs attract some of the best people who go into the cancer field; the recipients work longer hours for less money than others of comparable experience (because of the special prestige and freedom the awards carry); they contribute immeasurably to current discoveries;

and those in the clinical field learn and help to improve upon the best techniques in cancer care.

Every scientist and doctor working in the Program with whom we have discussed the matter feels that the continuation and improvement of the training programs is highly desirable to the immediate ends we are seeking to achieve. However, the Panel has not been successful in convincing members of OMB and members of your immediate staff of the essentiality of this program and the burden is on us to make an irrefutable case for the program. We are now attempting to put together highly specific factual material. If this material results in an overwhelmingly convincing case for the continuation of the training programs in the cancer field, we will ask for a reopening and reconsideration of this question.

## Organization

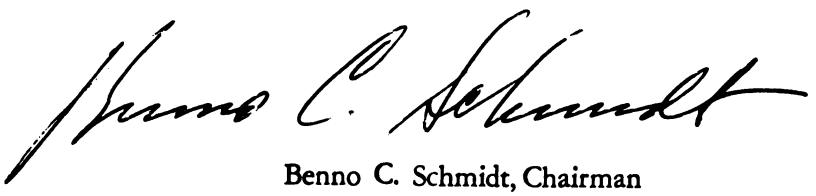
The Panel is highly pleased with the performance of the Director of the NCI and his staff and with the performance of the National Cancer Advisory Board. In our experience in the Federal bureaucracy, the quality of work represented by a high percentage of the output of the staff of the NCI is unique. The National Cancer Advisory Board, which began its service in March of 1972, has been singular in the effectiveness of its performance and the dedication of its members. We have also had splendid cooperation from the scientific and medical community as a whole in the activities of the study sections, peer review groups, standing committees, ad-hoc committees, and other groups called upon in connection with this program. The Panel is unaware of any instance in our peacetime history of comparable involvement of the scientific community in a government program of this type.

## Conclusion

One of our greatest concerns is the risk of inordinately high expectations on the part of the Congress and the public. We must not think of this program as comparable to a moon shot or an atom bomb program. It cannot be regarded as a crash program for the accelerated implementation of known basic science. Instead, this is a program in basic science matched with the endeavor to bring the best of today's science to the cancer patient. We are not in search of a magic

bullet, but rather are attempting to mobilize the best brains available in this nation and the world to insure that they have an opportunity to make their maximum contribution to the cause of solving the cancer problem and of minimizing the time required for the solutions to benefit the cancer patient.

Respectfully submitted,



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# President's Cancer Panel

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